

CLAIMS

We claim:

- 5
10
15
20
25
30
35
1. An isolated DNA selected from the group consisting of:
(a) a DNA encoding a protein having an amino acid sequence of amino acids 1 through 417 of SEQ ID NO: 2;
(b) a DNA encoding a protein having an amino acid sequence of amino acids 1 through 411 of SEQ ID NO: 5;
(c) DNA molecules capable of hybridization to the DNA of (a) under stringent conditions, and which encode biologically active AIR; and
(c) DNA molecules encoding biologically active fragments of proteins encoded by the DNA of (a), (b) or (c).
2. The DNA according to claim 1, selected from the group consisting of oligonucleotides of at least about 17 nucleotides in length, oligonucleotides of at least about 25 nucleotides in length, and oligonucleotides of at least about 30 nucleotides in length, having a nucleotide sequence derived from the DNA of SEQ ID NO:1 that encodes the cytoplasmic domain of AIR.
3. An isolated DNA according to claim 1, selected from the group consisting of:
(a) a DNA encoding a protein having an amino acid sequence of amino acids 1 through 417 of SEQ ID NO: 2;
(b) a DNA encoding a protein having an amino acid sequence of amino acids 1 through 411 of SEQ ID NO: 5;
(c) DNA molecules encoding biologically active AIR polypeptides that are at least about 70% identical in amino acid sequence to the protein of (a); and
(d) DNA molecules encoding fragments of proteins encoded by the DNA of (a), (b) or (c), and which encode biologically active AIR.
4. An isolated DNA encoding an AIR polypeptide comprising an amino acid sequence as set forth in SEQ ID NO:2, having an amino terminus selected from the group consisting of an amino acid between amino acid 1 and amino acid 29, inclusive, of SEQ ID NO:2, and a carboxy terminus selected from the group consisting of an amino acid between amino acid 190 and amino acid 200, inclusive.
5. An isolated DNA encoding an AIR polypeptide comprising an amino acid sequence as set forth in SEQ ID NO:2, having an amino terminus selected from the group consisting of an amino acid between amino acid 225 and amino acid 335, inclusive, of SEQ

ID NO:2, and a carboxy terminus selected from the group consisting of an amino acid between amino acid 410 and amino acid 417, inclusive.

5 6. A recombinant expression vector comprising a DNA sequence according to claim 1.

7. A recombinant expression vector comprising a DNA sequence according to claim 3.

8. A recombinant expression vector comprising a DNA sequence according to claim 4.

10 9. A recombinant expression vector comprising a DNA sequence according to claim 5.

10. A host cell transformed or transfected with an expression vector according to claim 6.

15 11. A host cell transformed or transfected with an expression vector according to claim 7.

12. A host cell transformed or transfected with an expression vector according to claim 9.

20 13. A process for preparing an AIR protein, comprising culturing a host cell according to claim 10 under conditions promoting expression and recovering the protein.

25 14. A process for preparing an AIR protein, comprising culturing a host cell according to claim 11 under conditions promoting expression and recovering the protein.

15. A process for preparing an AIR protein, comprising culturing a host cell according to claim 12 under conditions promoting expression and recovering the protein.

30 16. An isolated AIR polypeptide selected from the group consisting of:

(a) a polypeptide having an amino acid sequence of amino acids 1 through 417 of SEQ ID NO: 2;

(b) a polypeptide having an amino acid sequence of amino acids 1 through 411 of SEQ ID NO: 6;

35 (c) an AIR polypeptide encoded by a DNA capable of hybridization to a DNA encoding the protein of (a) under stringent conditions, and which is biologically active; and

(d) biologically active fragments of the polypeptides of (a), or (b).

17. An isolated AIR polypeptide according to claim 16, selected from the group consisting of:

(a) a polypeptide having an amino acid sequence of amino acids 1 through 417 of SEQ ID NO: 2;

(b) a polypeptide having an amino acid sequence of amino acids 1 through 411 of SEQ ID NO: 6;

(c) an AIR polypeptide that is at least about 70% identical in amino acid sequence to the polypeptide of (a), and which is biologically active; and

(d) biologically active fragments of the polypeptides of (a), or (b).

18. An isolated and purified soluble AIR polypeptide selected from the group consisting of a polypeptide comprising an amino acid sequence as set forth in SEQ ID NO:2, having an amino terminus selected from the group consisting of an amino acid between amino acid 225 and amino acid 335, inclusive, of SEQ ID NO:2, and a carboxy terminus selected from the group consisting an amino acid between amino acid 410 and amino acid 417, inclusive, and biologically active fragments of the polypeptide.

19. A composition comprising an AIR polypeptide according to claim 18, and a suitable diluent or carrier.

20. An antibody immunoreactive with AIR.

21. The antibody of claim 20 which is a monoclonal antibody.